CHAPTER 4 - POLLUTION PREVENTION

4-1. Purpose. This chapter establishes guidance for implementing the USACE Pollution Prevention Program for Civil Works functions.

4-2. Applicability. This chapter applies to all USACE commands having responsibility for civil works functions, and to military-funded USACE facilities.

4-3. Background.

a. Federal legislation was passed in 1986, prompted by accidental industrial releases of toxic chemicals which, in one case in Bhopal, India, killed and injured hundreds of people in the area immediately surrounding the facility. The legislation provided for Emergency Planning between industry and state and local governments to protect public health and safety and the environment, and to coordinate a national chemical emergency planning system. Additional purposes of the legislation included the: increased awareness of chemical hazards; support and focus of state and local planning activities; and support of chemical accident and pollution prevention initiatives. Commonly called "EPCRA", the Emergency Planning and Community Right-to-Know Act of 1986 requires industry to report certain chemicals and materials, and to establish and maintain a relationship with communities potentially affected by their facilities.

b. Executive Order 12856 extends the requirements of EPCRA to Federal facilities and requires the establishment of Pollution Prevention Programs at each Federal agency, and completion of pollution prevention plans at the facility level. The U.S. Environmental Protection Agency (EPA) oversees the Pollution Prevention Program of Federal agencies through guidance, training, technical assistance, and reporting of progress and status.

c. The EPCRA, Executive Order 12856, and several other environmentally related Executive Orders, have resulted in a pollution prevention program within the Departments of Defense and of the Army and in the U.S. Army Corps of Engineers (USACE). Since 1992 Prevention has been one of the four pillars in the U.S. Army Environmental Strategy into the 21st Century, along with compliance, restoration, and conservation. Pollution prevention, through "source reduction" has been a guiding principle of the Pollution Prevention Act since 1990. With Executive Order 12856 in September of 1993, a formal Federal agency-wide program has been formulated and USACE is committed to be a leader in pollution prevention.

d. Pollution prevention is the use of materials, processes, or practices which reduce or eliminate pollution at its source. It focuses on eliminating discharges of hazardous or toxic chemicals to the environment and protects natural resources through conservation and improved efficiency. Pollution prevention also reduces the use of hazardous materials, energy, and water. This is a "multi-media" approach to improving the environment and in operating our facilities more efficiently by managing all environmental media; air, land, and water, together.

e. Preventing pollution, through source reduction, is the first step in protecting the environment. Other steps, in descending order, are recycling, treatment, and disposal in an environmentally acceptable manner. A successful pollution prevention program can reduce costs, increase efficiency, improve the quality of our service to the Nation, foster a healthy and safe facility for our visitors and employees, and improve the environment.

4-4. Guidance.

a. Each USACE organization, from the Headquarters to the project or facility level, must develop a Pollution Prevention Program. Pollution prevention is everyone's responsibility; from the commander to each team member.

b. Major products of the Pollution Prevention Program include: pollution prevention opportunity assessments, pollution prevention plans, pollution prevention measures, and reports.

(1) Pollution prevention opportunity assessments are performed at each project and facility or whenever practicable, pollution prevention opportunity assessments developed for similar projects or facilities are adapted. The purpose of the assessment is to develop, update and implement the pollution prevention program. The assessment characterizes operations at the project or facility, provides an inventory of previous and on-going initiatives, quantifies usages, releases and wastes, develops opportunities for reducing usage, releases, and wastes, and analyzes the technical, environmental and economic feasibility of selected opportunities.

(2) Pollution prevention plans combine the results of the opportunity assessments in a logical plan for implementing cost-effective projects and activities that will prevent pollution at the facility. Opportunities and processes identified in the assessments and plans must be evaluated, rated, and set in place on the basis of their life-cycle costs and value added to the facility. Most pollution prevention plans will contain significant information on how findings are to be implemented. Projects and facilities may be combined or grouped into a single pollution prevention plan. Groupings may be on the basis of pollutant type, operational purposes or features, administrative or management units, or geographic affinity (e.g. area, region, watershed, state, district). Districts should obtain concurrence of the Major Subordinate Command before committing to groups or combinations. For reasons of schedule and funding, details of implementation for some plans, may be developed after pollution prevention plans have been completed. Pollution prevention plans, either an individual or a group plan, must be maintained at the site and must be made available at the request of the public and the regulatory community.

(3) Once approved and resourced, the activity, contract, modification, or whatever form the pollution prevention implementation takes becomes a measure. Pollution prevention measures may include modifying a painting process, or eliminating painting at the site and contracting it out. Another example may be changing underground fuel storage tanks to above ground storage tanks of smaller volume.

(4) Reporting may be required by higher authority to meet Department of Defense and Department of the Army report requirements, or as a measure of USACE performance in preventing pollution. EPA may conduct data calls and require periodic reports direct from each facility.

c. Establishing a baseline and measuring success. Pollution prevention program effectiveness is determined by comparing benefits and improvements against an established facility baseline.

(1) The baseline is a comprehensive picture of the materials usage patterns and environmental impacts resulting from the operation of the facility. The baseline can best be generated by the operating staff, although outside assistance can often be helpful as a new

perspective on how and why things are done the way they are. Each waste generating operation, including; purchasing and handling of raw materials and other incoming products, and location and processes of where they are being used, must be assessed and quantified as distinctly as possible. The baseline must show: what wastes and pollutants are being generated; what processes are generating these wastes and pollutants; and what volumes and characteristics of the wastes are being generated.

(2) The baseline often takes the form of a matrix comparing the before and after conditions. The matrix may list the process, or waste stream, or material use for a baseline year, and compare it against the changes effected due to pollution prevention measures. Executive Order 12856 requires a baseline year no later than 1994, i.e. the matrix would show the project condition in 1994. It may be advantageous to make the baseline condition earlier if project or facility advancements prior to 1994 should be credited to pollution prevention.

(3) EPCRA and Department of Defense focus is on toxic chemicals. Toxic chemicals must be included in the baseline. The typical USACE facility will be addressing more environmentally benign conditions than originally envisioned by EPCRA and Department of Defense. This is in part due to the non-industrial nature of USACE projects and facilities, and because of good environmental stewardship and sound practices that are ingrained in USACE environmental management. The Department of the Army has agreed that USACE does not have the toxic chemical inventories upon which EPCRA and agency goals are predicated. Consequently, USACE will not be contributors to the Department of Defense goal of 50 percent of Toxic Release Inventory reductions.

(4) This makes the establishment of a reasonable baseline, and quantifying improvements in preventing pollution, more subjective for USACE than for other Department of Defense facilities. It is equally important for USACE, as committed leaders in pollution prevention, to develop baselines that include any source of pollution at the project or facility. It is also important that the source reduction of pollution at the project or facility be quantified in a realistic way to demonstrate the effectiveness of its pollution prevention program.

4-5. Additional Definitions. A number of terms are used in policy and guidance documents that require further amplification. Following are some of the more commonly used terms: most require reference to lists or explanations contained in other sources such as EPCRA. In all cases our use of terms in USACE is intended to agree with their uses and definitions by EPA and in Executive Order 12856 and in EPCRA.

a. Extremely Hazardous Substances. Refer to EPCRA sections 301 to 303. See 40 CFR 355, Appendixes A & B: both list the same chemicals, in alphabetical order and by the Chemical Abstract Service (CAS) number.

b. Extremely Hazardous Substances and CERCLA Hazardous Substances. Refer to EPCRA section 304. See 40 CFR 355 and 302.4.

c. Hazardous Chemical Inventory. Refer to EPCRA section 311 and 40 CFR 370.21. Also refer to EPCRA section 312 and 40 CFR 370.25. Covers the OSHA Hazardous Chemicals (no specific list). Material Safety Data Sheets are required for OSHA Hazardous Chemicals. If a Material Safety Data Sheet is not required for a material, it is not subject to EPCRA sections 311 and 312.

d. Toxic Chemical Release. EPCRA section 313 and 40 CFR 372. These are the Form "R" Reportable chemicals.

e. Toxic Chemical. A substance on the list described in EPCRA, section 313 (c) and found in 40 CFR 372.65.

f. Toxic Pollutant. The term includes, but is not limited to, those chemicals subject to the provisions of EPCRA, section 313, as of December 1, 1993. It does not include hazardous waste subject to remedial action generated prior to the date of Executive Order 12856, 3 August 1993. These wastes cannot be affected by "source reduction" and should not be factored into the baseline for measuring progress in pollution prevention.

g. Additions to Toxic Pollutants. Federal agencies may choose to include releases and transfers of other chemicals, such as "extremely hazardous chemicals" as defined in section 329(3) of EPCRA, hazardous wastes as defined under Resource Conservation and Recovery Act of 1976, or hazardous air pollutants under the Clean Air Act Amendments; however, for the purposes of establishing the baseline, these are additions to the EPCRA section 313 chemicals (not instead of).